

Syntron® Vibratory Parts Feeder Model: Legacy™ UM-15

■■■■ SAFETY ■■■■ INSTALLATION ■■■■ OPERATION

Parts Feeder Drive

- Features and Benefits
- Spring Replacement
- Parts List
- Specifications

Thank you for buying equipment from Homer City Automation Inc. This manual will help you to understand how your equipment operates and what is required to maintain peak performance. Please read it thoroughly and keep it on file for reference. Your satisfaction is important to us, so please direct any comments to our Customer Service department.

■ SAFETY INSTRUCTIONS

 Product safety labels must be highly visible on the equipment. Check visibility on a regular basis. If safety labels need replaced, contact Homer City Automation Inc. for an additional supply free of charge.

  **WARNING:**
These instructions and safety precautions must be followed. There is hazard of electric shock to the operator.

  **WARNING:**
Disconnect and lock out the power supply at the safety disconnect switch before performing any maintenance.

■ INSTALLATION

NOTE: Local safety codes and regulations must be considered when installing and/or operating this unit.

  **POWER SUPPLY**
It is important to follow the wiring diagram, supplied with the control, when making electrical connections. Voltage and frequency must match the requirements designated on the control nameplate.

  **WARNING**
Before starting the machine, remove the red shipping brackets (if equipped) from the vibratory drive.

  **WARNING**
The unit must be properly grounded.

FEATURES AND BENEFITS

The Syntron® Vibratory Parts Feeder Drive Model UM-15 features a round base construction with three spring stacks, and a single, center mount coil and armature. This unit operates at lower current than other syntron parts feeder models, making it possible for a more cost efficient control to be used. The circular design makes installation of the drive unit in confined places easy and fast. Three rubber isolator feet are provided for isolation of vibration between the drive unit and the mounting structure. The accessible rubber isolators are adjustable one-quarter inch up or down to achieve bowl discharge height, and are adjusted and locked on top of the base plate. This three-point mounting feature provides an even weight distribution of the drive unit, producing a high degree of stability.

Various sizes of bowls can be mounted to the drive unit. Mounting methods include center mount or three-point toe clamp arrangements. The three-point contact feature greatly reduces stress in the bowl, allowing for better feed characteristics. Optional base weights can be added to the drive unit to increase the weight mass of the base when larger and heavier bowls are used, making this drive unit very versatile.

Optional drive-unit covers are also available and can be supplied for additional protection of the drive unit components as well as overall aesthetic appearance.

SPRING REPLACEMENT GUIDE

The Model UM-15 incorporates three spring stacks. Replace or rebuild only one stack at a time. This permits the remaining stacks to serve as support for the upper mass (bowl and crossarm/armature assembly), during the replacement procedure.



WARNING

Disconnect and lock out the power supply at the safety disconnect switch before performing any maintenance.

1. Proper arrangement of the spring stacks is critical to optimize feeder operation. Before removing a spring stack, match-mark each spring stack at the top and bottom so that the original arrangement can be maintained.
2. Remove both clamp bolts (H), clamp blocks (G), all spacers (E) and leaf springs (F).

Important: When removing these items, take special note of their location in the stack arrangement. Spring and spacer requirements may vary depending on the unit

To avoid premature spring failure, assemble the thickest springs to the stack first, followed by the thinnest springs.

3. Examine each leaf spring, one at a time, for signs of fatigue or defects (breaks, hairline fractures, rust, etc.).



CAUTION: All of the spring stacks should be carefully examined. Always replace a defective spring with a new spring of the same thickness and width.

4. When reassembling a spring stack, it is important to isolate each spring with spring spacers at both the top and the bottom mounting locations, and to verify that the springs are in their correct locations. Attempt to balance spring strength in each stack.
5. With all springs, spring spacers and clamp blocks in position and aligned, insert and tighten the top and bottom clamp bolts.



WARNING: Never oil the spring assembly. If the spring stacks are repainted, be sure no paint is applied to the area between the spring clamping surfaces.

6. Tighten each clamping bolt (H) evenly, then torque to the recommended 110 ft/lbs.
7. Connect the electrical supply and refer to the **(AIR GAP ADJUSTMENT)** below.

AIR GAP ADJUSTMENTS

The air gap of a vibratory feeder is the spacing between the armature face and the face of the magnet core assembly. Proper adjustment is critical for optimum feeder performance.

If the air gap is adjusted too close, the armature and core will make contact during feeder operation, causing striking.

 **WARNING: A “striking” condition will cause severe mechanical damage; broken springs, cracked bowl, crossarm, armature or magnet core.**

If the air gap is adjusted so that the armature and core are too far apart, the unit will draw high amperage and result in coil burn-out, failure of control components, or poor of bowl stroke and part feed rate.

The air gap is properly set at the factory. However, if the air gap has been moved, due to improper handling or rebuilding of drive unit, adjustment may be necessary.

NOTE: Do not operate the feeder while the air gap is being adjusted.

 **WARNING: Disconnect and lock out the power supply at the safety disconnect switch before performing any maintenance.**

1. Turn off the power to the unit and loosen the three socket head cap screws (J) which secure the coil mounting plate to the base plate. (Loosen each cap screw approximately one half turn).
2. Using the three socket head set screws (L), adjust the coil mounting plate in the required direction (either closer to or farther away from the armature assembly) a little at a time and equally on each side to obtain an initial .025 inch air gap between coil and armature.
3. When adjusting the air gap, never set the gap so close that a “striking” condition results. Never set the gap so wide that rated current is exceeded.
4. After achieving the initial .025 inch air gap, reconnect power to the unit and operate the unit to observe feed characteristics. If the feed rate is too low, repeat the adjustment procedure to decrease the air gap .005 inch at a time to achieve a higher feed rate.

After each air gap adjustment, tighten the socket head cap screws (J) securing the magnet mounting plate to the base.

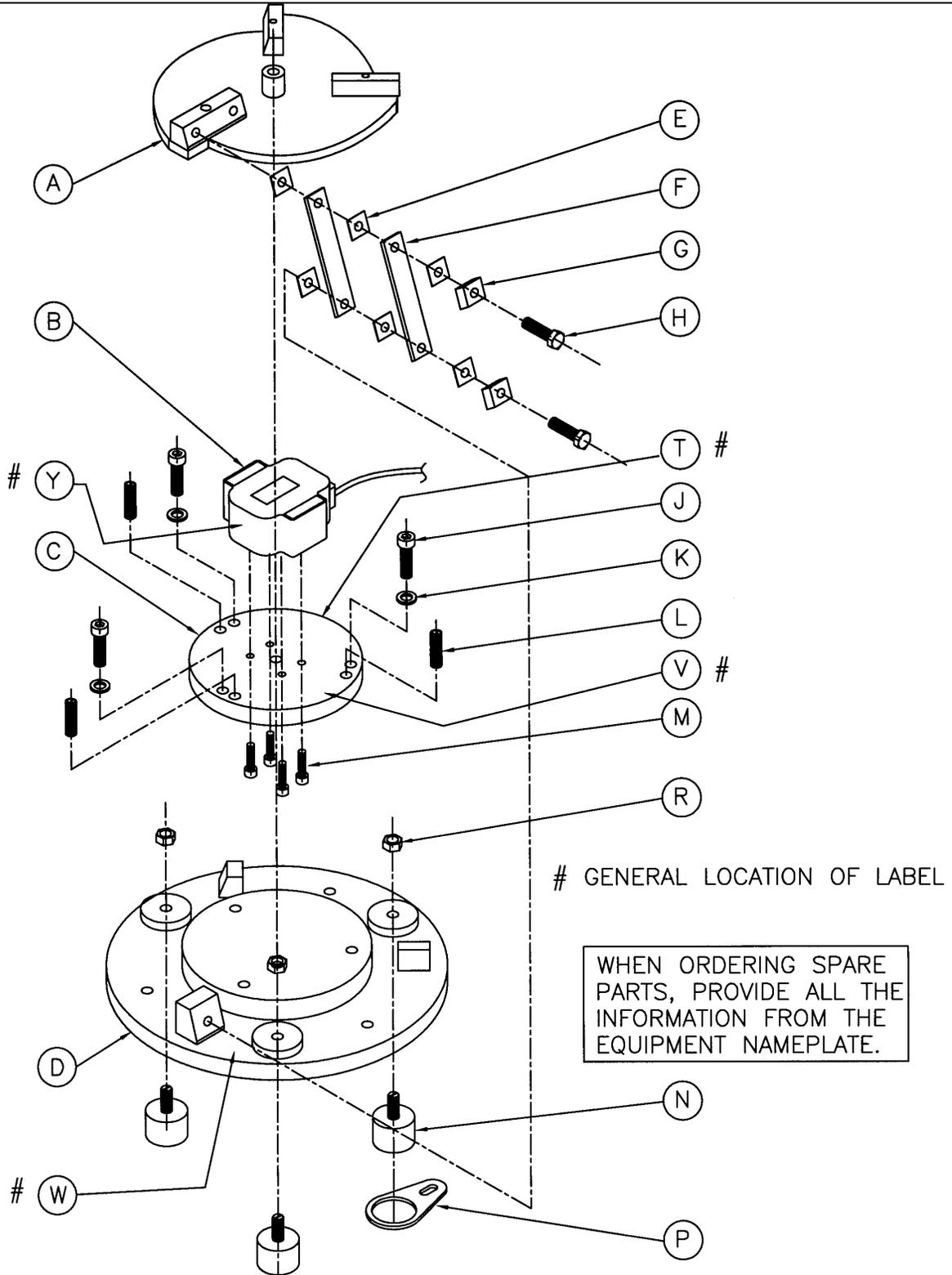
Feeder Amperage – When measuring the amperage of a feeder, a clamp-on ammeter does not reveal the same current as stamped on the equipment nameplate. This is due to the waveform characteristics of the rectified current (RC) feeder operation. To obtain a true amperage reading, multiply the clamp-on ammeter reading by 1.7.

PARTS FEEDER SPECIFICATIONS

Maximum amperage draw – 2.5 **(Not to exceed)**

Recommended air gap setting - .025 inch

Drive spring torque - 110 ft-lbs.



Parts List - Vibratory Parts Feeder
MODEL: UM-15-S and UM-15-L

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>PART NO.</u>
A	Top Plate and Armature Assy.		
	UM-15-S		
	Counter Clockwise	1	223173-A
	Clockwise	1	223173-B
	UM-15-L		
	Counter Clockwise	1	223202-A
	Clockwise	1	223202-B
B	Magnet Assembly		
	115V/60HZ	1	223185-B
	230V/60HZ	1	223185-C
	115V/50HZ	1	223185-D
	230V/50HZ	1	223185-E
C	Magnet Mounting Plate	1	223166-1
D	Base Assembly		
	Counter Clockwise	1	223172-A
	Clockwise	1	223172-B
E	Spacer	AS REQ'D	182648-C
F	Leaf Spring		
	3/32" Thick	AS REQ'D	182548-C
	1/8" Thick	AS REQ'D	182548-H
	3/16" Thick	AS REQ'D	182548-G
	1/4" Thick	AS REQ'D	182458-D
G	Clamp Block	6	182649-C
H	Cap Screw HX HD, GR. 8		
	1/2-13 x 1-1/2"	AS REQ'D	H0320809
	1/2-13 x 1-3/4"	AS REQ'D	H0315609
	1/2-13 x 2"	AS REQ'D	H0303509
	1/2-13 x 2-1/4"	AS REQ'D	H0321709
	1/2-13 x 2-1/2"	AS REQ'D	H0304509
J	HX SOC HD Screw 1/2-13 x 2"	3	H0424900
K	Lockwasher	3	H0113609
L	Set Screw HX SOC CUP 1/2-13 x 1 1/2"	3	H0457300
M	HX SOC HD Screw 5/16-18 x 1" (secure with lock-tite)	4	H0419100
N	Isolator Foot	3	223209-1
P	Foot Locator	3	223204-1
R	HX Jam Nut 1/2-13	3	H0104004
S	Bowl Mounting Assy. (NOT SHOWN)		
	When Mounting 10" O.T., 15" O.T., & 24" Cascade Bowls	1	
	When Mounting 12" O.T. Bowl	1	
	When Mounting 24" Cast Aluminum Cascade Bowl	1	
T	* Warning Label	1	125694
V	* Name Plate	1	223240
W	* Torque Label	1	183986
X	* Stroke Gage (NOT SHOWN)	1	58462
Y	* Air Gap Adjustment Label	1	195774
	Optional Covers (Not Shown)	1	Consult Factory

* Do not remove or paint over safety labels or name plate. If safety labels need replaced, contact Homer City Automation for an extra supply free of charge.



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